THE HYGIENE AND TOXICOLOGY OF MAJOR INSECTOFUNGICIDES USED IN AGRICULTURE, CHIEFLY IN THE COTTON GROWING INDUSTRY

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[Following is a translation of a book review by S. M. Tregobov (Samarkand), published in the Russian-language periodical Gigiyena Truda i Professional'nyye Zabolevaniye, (Industrial Hygiene and Occupational Illnesses) 7 (5), 1963, page 61. The book reviewed was written by Kh. Z. Lyubetskiy and B. E. Gurevich and has the title Gigiyena i toksikologiya vazhneyshikh insektofungitsidov, primenyayemykh v sel'skom khozyaystve, glavnym obrazom v khlopkovodstve, Tashkent, 1961, 60 pages, 3,000 copies, price 18 kopecks. Translation of book review performed by Sp/6 Charles T. Ostertag Jr.]

The wide implementation of harmful chemical substances in the agricultural technology of the cotton plant requires the realization on the part of public health organs of measures against possible poisonings by them.

The materials found in the book mainly present the current status of the problem. The authors are well acquainted with the state of affairs in the cotton growing industry. They clearly see the missions of medical personnel in connection with the wide implementation of insectofungicides in agriculture.

The central position in the book is occupied by the presentation of the necessary information concerning the most toxic organophosphorus compounds which apparently in the near future will occupy the basic position among insectofungicides.

The most serious shortcomings of the book under review are the extreme brevity and incompleteness of information concerning the prophylaxis of affections by poisonous chemicals. Also information about individual means of protection is fragmentarily presented in the book, since a doctor from the rural medical station, as it is written in the book (page 15), has the duty to give directions and check the ability to use them. It would have been expedient to present a detailed description of all the means of protection and the methods of using them.

The most significant shortcoming of the section "Organophosphorus Insecticides" is embraced in the complete lack of directions about the necessity of investigating the blood for the activity of choline esterases when conducting a medical examination of personnel who are permitted to work with organophosphorus compounds. This is specified by the "Instructions for the use of organophosphorus preparations for the protection of cotton plants from pests

in the Uzbek SSR in 1961" which are currently in force and in which Kh. Z. Lyubetskiy and B. E. Gurevich took part in compiling. There should have been a description of the method for determining choline esterases in the blood and a list of the necessary equipment and reagents.

It is doubtful if it is justified in this book, which is intended for the practicing physician and average medical worker, to carry out to excess the detailed numerical facts about the toxicity of organophosphorus preparations for various laboratory animals.

In the section "Arsenic Preparations", which discloses the therapeutic measures for stopping the spasms which develop during acute arsenic poisoning and recalls the necessity of using antispasmodic substances during this (page 38), the authors do not say what substances and dosages they recommend. Besides the native specific antidote for arsenic poisoning -- unithiol, it isn't excessive to mention the similarly acting preparations of dimercaptopropanol which are produced in countries of the socialist camp and authorized for use in the USSR (dicaptol, dimercaprol, dithioglycerol).

In the section "Organic Chloride Preparations" it is inadmissible to write about the necessity of administering "1 ml of apomorphine subcutaneously" without indicating the concentration of the recommended solution (page 46). It is incomprehensible why for compensation of a deficit of calcium in the organism the authors recommend the use parenterally of only calcium gluconate and internally only calcium chloride (page 47). Contraindications are unknown to us for the administration during poisoning by organic chloride compounds of calcium chloride intravenously and calcium gluconate (and also calcium lactate of which the authors make no mention) internally. Perplexity is caused by the recommendation of the authors (page 47) to treat affection of the eyes with a 2% solution of novocaine.

When stating the measures of first aid and treatment of affections by nicotine and anabasine in the section "Poisonous Chemicals of Vegetable Origin" (page 55), the authors caution against the use of lobeline, since it possesses effects similar to nicotine. And the question is raised by the reader: And in these cases is it safe to use cytisine solution (cytisine) which also acts similar to lobeline, and to nicotine, though in the make-up of the first aid medicine chest the authors do not include lobeline but cytisine solution.

It is significant that all the errors (and some of them remained unnoticed) concern solely the names of medicinal substances or their dosages.

It must be hoped that the next edition of this book which is generally valuable and of extreme necessity for medical personnel will be published in the very near future in a supplemented and revised form and moreover with a considerably larger printing.